Understanding Women's Perceptions on Rangelands in a Pastoral context - A case of Changthang, Ladakh

INTERNSHIP REPORT

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UNDER THE GUIDANCE OF

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Declaration by the student

I certify that

The work contained in report is original and has been done by myself under the supervision of my supervisor.

The work has not been submitted to any other Institute for any degree or diploma.
I have conformed to the norms and guidelines given in the Ethical Code of Conduct of the Institute.

Whenever I have used materials (data, theoretical analysis, and text) from other sources, I have given due credit to them by citing them in the text of the thesis and giving their details in the references.

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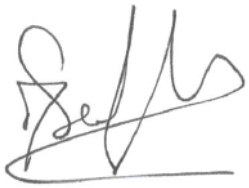
Certificate

This is to certify that the internship report on“ Understanding Women’s Perceptions on Rangelands in a Pastoral context - A case of Changthang, Ladakh” submitted by **ANEREE DHEBAR (Regd. No.: 2021MSCES03)** is the work done by her submitted during **2021-2023** academic year, is in partial fulfillment of the requirements for the award of the degree of MSc Environmental Studies (Conservation Practice).

Name & Signature of the supervisor



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I. Acknowledgment

This project is not just an individual research project but rather an outcome of multiple efforts put together.

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III. List of Abbreviations

ATREE- Ashoka Trust for Research in Ecology and Environment

BRO- Border Roads Organisation

BNC- Black Necked Crane

CFP- Centre for Pastoralism

TR- Tibetan Refugee

WWF- Word Wide Fund for Nature

IV. Glossary

Goba- village headsman

Ama tsogspa- Women's association

Nambardar/lambardar- Village Headsmen- alternative word for Goba

Changra goat- local name for pashmina goats

Chumik- natural spring

Palu- Himalayan Edelweiss

Dzatsutt- Stining nettle

Skotche- Wild garlic

Jungwa zhi- four elements of nature that constitutes all matter

Nullahs - stream-like water bodies

V. Abstract

The Changthang region in Ladakh is renowned for its high-altitude rangelands characterised by a severe climate, strong winds, and minimal precipitation. These challenging environmental conditions make it unsuitable for agricultural activities but provide sustenance to pastoral livelihoods. The area boasts rich biodiversity and serves as the cherished homeland of the Changpa community. However, the socio-economic landscape of the Changpas is constantly evolving due to external factors such as increased opportunities, development, and tourism. These changes have a profound impact on the community's perceptions and interactions with the rangelands.

Within the Changpa community, both men and women rely on and engage with the rangelands in different ways, resulting in varying perspectives and experiences about the ongoing transformations. This study aims to explore the viewpoints and aspirations of Changpa women concerning the rangelands and the challenges they encounter in the face of these changes. Additionally, the research seeks to comprehend the gender dynamics within the community, including the division of roles and responsibilities.

This study utilizes a cross-sectional approach to select the respondents and key informants from different backgrounds. Women across age groups, occupations, and economic groups were identified as primary respondents, men being the secondary respondents. To collect the data, 63 structured interviews and 18 semi-structured interviews were conducted using interview guides and questionnaires. To learn more about public perceptions, governance, grazing routes, traditions, and the policy landscape, interactions with the Ama Tsogpa (women's council), Goba (village headsman- lambardar/nambardar), Sarpanch, and Changpa women representatives were held.

The key findings of the study highlight the roles and responsibilities of Changpa women that encompasses domestic work, herding, and their significant role in culture preservation and knowledge transmission of the traditional handloom art. It also brings out the challenges faced by the community and the evolving landscape, the dynamics of grazing practices, and the gap in intergeneration knowledge transmission due to changing aspirations of the youth. The report also identifies problems brought on by changing weather, poor healthcare access, livestock predator threats, economic changes, patriarchal attitudes, and shifting resource growth patterns. Despite the difficulties, the Changpa community nevertheless feels a strong bond with nature and a strong feeling of community. They express worry about the future of the rangelands and rely on a higher power to protect their well-being. They rely on traditional practices to maintain environmental equilibrium.

Furthermore, this study underscores the importance of inclusive conservation efforts that ensure the equitable distribution of benefits among all community members. By understanding the unique perspectives of Changpa women and recognizing the gender-specific impacts, conservation initiatives can be tailored to foster a more balanced and sustainable coexistence between the community and their cherished rangelands.

VI. Introduction

Changthang (4500 metres above sea level), located in Ladakh at high altitudes, is a remarkably distinctive bio-cultural and socio-ecological landscape. This region boasts extensive grasslands and wetlands, and it is inhabited by pastoralist communities that implement diverse forms of mobility. The area endures harsh weather conditions, with winter temperatures plummeting to -45 degrees Celsius, limited precipitation, and strong winds sweeping across its vast valleys. Consequently, agricultural activities are not viable here, resulting in sparse vegetation. However, these challenging climatic conditions create favourable circumstances for pastoralism, which serves as the predominant means of livelihood.

Figure 1. Landscape of Samad, Changthang

Changthang comprises expansive rangelands that include wet and marshy meadows, extending from lakes, wetlands, and other water bodies (as reported in the Goba report). Within this unique habitat, a wide array of wild ungulates such as Tibetan gazelles, argali, and kiang thrive, alongside predators like snow leopards, pallas's cats, and wolves. Furthermore, the region provides a suitable habitat for Pashmina goats (known locally as Changra goats), sheep, and yaks, which are raised by the nomadic pastoralist community of

Changpas.

The Changpas are the major stakeholders, actors, and users of the rangelands. They are traditionally pastoral nomads and follow Buddhism. The socio-economy of the Changpas is in flux (Namgail et al., 2007). Due to the extreme climatic and ecological conditions, they are more vulnerable to climatic and external socio-political pressures. The wave of development (linear infrastructural development, increased defense activities, increased employment options with BRO etc.) along with increased tourism activities has introduced significant changes- negative as well as positive, to the landscape and the Changpa community's socio-economy. Better connectivity has been established with the towns and cities like Leh, which has significantly increased the accessibility of resources and facilities for the Changpas. Alternative income-generating opportunities have also been created due to increased tourism. The increased army presence in the region has led to a reduction of available pasturelands for the herders. These factors have had positive and negative effects on the lifestyle, livelihood strategies, and culture of the Changpa community. There is also the question of how these livelihoods will adapt to the changing weather conditions and external pressures. Furthermore, like any other pastoral nomadic community, the Changpas are a minority often facing under-representation and socio-economic and geographical marginalisation (Bhasin, 2012, 85-129). The voices and opinions of these critical groups remain unheard of in many instances, even though it is essential to consider them while devising a management plan for the natural resources (in this case, rangelands).

Historically, the communities of Changthang have managed these resources using their own indigenous knowledge, traditional management systems, and institutions such as the Goba. The Goba, is the village headman who acts as a representative of the village with social and cultural- ritual responsibilities (Bajpai et al., 2022). The village is enabled to take decisions regarding availability and access to natural resources and other decisions about socio-cultural and economic spaces via a self-governance system of ‘the goba system’ within the village (Bajpai et al., 2022). As a result of external pressures and situations like development, globalisation, climate change, and other socioeconomic aspects, new challenges are arising.

The Changthang rangelands are subject to the influence of multiple stakeholders and actors, each with their own distinct interests and objectives. These diverse entities, including the local Changpa pastoralist community, government agencies, the tourism industry, conservation organisations, researchers, and potential industries, all play pivotal roles in shaping the fate of the region.

The traditional custodians of the land, the Changpa pastoralists, have implemented grazing patterns and mobility of livestock for generations, impacting the ecosystem in a delicate yet significant manner. Government agencies and policymakers, on the other hand, make decisions that can range from infrastructure development to conservation policies, each decision having implications on the rangelands' balance between

economic growth and environmental preservation. In light of this diverse array of stakeholders and their varying interests and power asymmetry, it becomes imperative to bring the voice of the Changpas and their vision of the Changthang rangelands to the forefront.

Conservation organisations and researchers, recognizing the region's ecological significance, contribute their efforts towards understanding the ecosystem and promoting sustainable practices to safeguard its unique biodiversity, address inequity, and alleviate poverty. In patrilineal societies, it is crucial to grasp the gender dynamics, division of labour, and gendered interactions with rangelands. This understanding is needed to ensure an equitable distribution of gains from conservation strategies within the community, thereby securing a fair and just outcome. By recognizing and addressing the specific roles and perspectives of both men and women in the context of the landscape, conservation efforts can be tailored to promote inclusivity and benefit all members of the community.

Figure 2 Few kids playing in a Rebo (tent originally made of Yak wool).

The Changpas have a patrilineal social organisation, where all members are the descendants of the founding ancestors following the patrilineal line (Bhasin, 2012, 85-129). Men dominate in the social, cultural, political, and religious spaces in usual cases, but women also play an important role in pastoral production activities

such as herding, shearing, and weaving. In the pastoralist way of life, women play a central role concerning the labour for livestock, land, and household (Bhasin, 2013, 1-23). Due to the gendered arrangement of social life and the distribution of labour, we might presume that there are differences in how people view the rangelands. Given that men and women depend on and interact with the rangelands for various reasons, they may be impacted by changes and resource availability in different ways. The perception and vision may differ in accordance with the diverse sources of dependencies and interactions with the rangelands, resulting in the varying significance of the rangeland in their daily lives. To better comprehend how these women perceive the rangelands, what their traditional knowledge entails, and how they are dependent on and challenged by these rangelands, it is crucial to understand gender dynamics and how the masculine and feminine roles are interconnected. Further, even though women are a significant contributor to the pastoral production system and the socio-economy of the community, the gains and returns from it are often not received by them. It is essential to make sure that the gains from the conservation strategies applied in the landscape are also equitably distributed among the community.

This study centres around comprehending the perspectives and aspirations of Changpa women. By specifically focusing on the women of the Changpa community in Changthang, Ladakh, I aim to address a significant gap in existing research. This area remains understudied, yet it holds crucial importance for rangeland management concerns. Therefore, my goal is to investigate the differences and similarities in viewpoints and visions within the community, between women and men.

The research study was established in collaboration with the World Wide Fund for Nature- India's Western Himalayas Programme. It falls under the scope of the project called "Reviving Trans-Himalayan Rangelands: A community-led Vision for people and Nature," which is conducted by WWF India- Western Himalayas Programme. This project is dedicated to tackling issues such as the degradation of high-altitude rangelands and its impact on biodiversity and livelihoods in the landscape. It aims to achieve this by supporting and documenting a community-led visioning process and co-management model for the rangelands.

Over time, traditional management models have weakened while various external factors have put pressure on local ecosystems, leading to landscape degradation. The project aims to develop a co-management model by facilitating a community-led visioning process that benefits both people and biodiversity, thereby promoting community stewardship. It also emphasizes the importance of socially just conservation efforts and ensuring that the benefits are distributed equitably among the community members (WWF India 2023).

VII. Description of internship

This internship has allowed me to get to know all the stages of the research continuum. It aimed at devising a research study that can contribute to the larger project and also align with the organisations' interest and goals, inculcate important skills of working with the team and community along with learning about the research process. The duration of my internship was seven months starting from February to August 2023. The activities undertaken as a part of the internship are divided into three phases- Pre-fieldwork (February-March), fieldwork (April-May), and post-fieldwork (June-August) activities. Pre-fieldwork activities involved identifying the problem and objectives of the research study and carrying out a literature review, deciding the research questions underlying the study's broad objectives, identifying data collection methods, acquiring financial support for the research, and taking due steps to make the research ethical. The pre-fieldwork phase is essential for setting up a strong foundation for the study and preparing for the fieldwork. During the fieldwork phase, I was involved in implementing the selected methods for data collection and adapting them according to the emerging understanding in the field. After conducting the pilot round of interviews, I became aware of my study's limitations, which allowed me to set boundaries. Post-fieldwork activities involve data collation and analysis of the same, producing the results and taking it back to the community along with exploring the future scope of the study.

Pre-fieldwork activities

1. **Objectives of the study**

    1. **Examining Changpa women's perspective and visions of rangelands**- To understand their role in rangeland management. Their knowledge of the management of pastures, livestock, and wild plants can be valuable for creating a management plan.

    2. **Examining how gendered perspective can be considered in conservation programming**- A gendered perspective is essential to make a conservation and management strategy more sensitive, inclusive, and just towards the under-representation within a marginalised group.

2. **Research questions**

    The research questions for objective 1 are as follows

    1. How do women interact with the rangelands on a daily basis?

2. What is their knowledge about the grasslands, its uses, and relationships with the livestock?
3. What kind of changes have they seen in the rangelands?
4. What kind of changes have they seen in the management of and access to the rangelands?

The research questions for objective 2 are as follows.

1. Given that tourism has been increasing, how do women perceive the impact of tourism on the rangelands?
2. How are women's voices carried out in the public sphere by women's councils (ama tsogspa)?
3. Given the results from the 1st objective, how to apply the learnings for better conservation strategy planning?

3. Methods

The study has been cross-sectional, so key informants and respondents from varied backgrounds were selected. The primary respondents were women from all age groups involved in different occupations and economic groups. Factors such as occupation are important in determining women's status, role, and interaction with the rangelands. This study focused on women as a primary category of respondents, and men were the secondary respondents. Pastoralists have different livelihood and production strategies, so the informants have been selected from different economic groups- (small herders, big herders). The data was collected after obtaining prior informed consent from the respondents. I conducted 18 semi-structured and 63 structured interviews to get a more significant representation. Interview guides and questionnaires were prepared before going to the field. I interacted with the Ama Tsogpa (women's council) to understand how perspectives and visions are expressed in the public sphere, the work they are involved in, representation within the council, etc. The Ama Tsogspa is a women's group that is an integral part of Ladakhi society, where the women meet and work for different socio-economic, spiritual and cultural needs of the village. It also works for resolving women's issues, culture preservation, maintaining peace within the community, and cleanliness in the village. Interviews with the Goba and Sarpanch were conducted to understand the grazing routes, change in the village traditions and occupations, pasture quality, traditional grazing calendar, their dependencies, and interactions with the rangelands. Tibetan refugees (TR) were a part of the study as they are active agents of change and hold a dynamic social position. A few interviews with the Changpa women representatives in the governance system were also conducted to understand the challenges they faced during the process, their worldviews, their visions for the future of rangelands, and the policy landscape of the region. Audio-visual documentation was done after obtaining consent from the respondents.

Figure 3 Structured interview being conducted with Ama Le in Rhongo

Figure 4 Interaction with the Ama Tsogspa of Thukje hamlet

4. Acquiring the funds

As an early career researcher, acquiring proper financial support to conduct the research is an essential step in the research process. The fieldwork for this internship was logistically and financially supported by WWF-India. But due to the remote nature of the study sites and the harsh climatic conditions, I needed additional financial support to prepare for the same. We reached out to the Centre for Pastoralism, Delhi, with a request to support the fieldwork for my research project. I received a short-term research grant from CFP that provided additional support for my fieldwork after submitting an extensive grant proposal and facing multiple rounds of interviews.

5. Research ethics compliance

As a part of this internship, I also familiarised myself with the ethical guidelines and principles of collecting and using data from the field. It is important to do so in order to protect and respect the presence and time of the participants by supporting their anonymity and confidentiality. The research protocol was authorised by Institutional Review Board, ATREE to ensure that the study complied with the ethical guidelines. While collecting the data on the field, prior informed consent was sought from the participants before documenting through any audio-visual mode. The interview transcripts and recordings were recorded in an encrypted form and also saved with the interviewer and the translator. Gender dynamic was also maintained to make the participants comfortable by creating a safe space for them.

Fieldwork

1. Study area

The study was conducted at three field sites in the Changthang plateau- Hanle, Rongo, and Samad. Hanle Valley is located 270 km southeast of Leh near the China border. (Namgail et al., 2007) The region's elevation is 4400-5800 m above sea level and the terrain has rocky hills with meadows used as pasture lands by the wild ungulates and domestic livestock. Hanle village has attracted a lot of tourists after being established as a dark sky reserve and the construction of the world’s highest observatory- the Indian Astronomical Observatory. A valid permit is required to enter Hanle. With the advent of increased tourism and defence movements, Hanle has witnessed rapid development. The population is involved in agro-pastoralism, nomadic pastoralism, and other sources of livelihood such as labour work with BRO or managing homestays. The village has preliminary network connectivity and receives electricity for a few hours of the day. Within Hanle, there are three hamlets- Khaldu, Punguk, and Buk Shado. The community headquarters are located at Khaldu. The interviews were conducted across all three hamlets and also with the herders living at the pastures. Rhongo village is situated 45 km from Hanle. Hanle and Rhongo are managed under the Nyoma

district subdivision. Samad is located at the Rupshu plateau and is also alternatively known as Rupshu. Samad Rokchen also falls in the Nyoma administrative block. The community headquarters are located at Thukjey/ Thugje. It is an important location for conservation as the Tso Kar basin is a high-altitude wetland complex consisting of Tso Kar, a salt-water lake, and Startsapuk Tso, a freshwater lake. It is an important nesting and breeding site for the Black Necked Crane (BNC). The interviews were conducted at Thukje and pastures around Thukje, Patsa taak taak, startsapuk.

Figure 5 Landscape of Hanle

Figure 6 Tso Kar lake, Samad

2. Identifying the respondents

The fieldwork was conducted for 30 days in total and was done in three rounds. A total of 81 interviews were conducted, comprising a heterogeneous group of Ladakhi Changpas and Tibetan Refugees (TR). Primary respondents were women, and a few men were interviewed, forming a group of secondary respondents. The age group of respondents ranged from 25 to 85. The interviews were structured and semi-structured in nature. Women and men involved in different pastoral production activities were identified by the snowball sampling method. Respondents were from nomadic pastoral families, agro-pastoral families, and also families following a sedentary lifestyle.

3. Limitations of the study

In my research study, I encountered several limitations that must be acknowledged. Firstly, due to limited time and funds available, I had less time to spend on the field. This constraint resulted in difficulties in fully connecting with the respondents and the field environment. Building rapport and trust with the participants takes time, and the limited duration hindered my ability to establish strong relationships, potentially affecting the depth of data collected. Additionally, the constrained resources prevented me from employing methods such as participatory and non-participatory observation. These methods are highly effective for understanding information communicated through non-verbal cues and gaining insights into the cultural

nuances of the Changpa community. By not utilising these methods, I may have missed valuable information that could have provided a richer understanding of the research topic. Given the intricate socio-economic and ecological landscape of Changthang, it is clear that a deeper level of engagement is essential to comprehensively grasp the conservation issues at hand. While my work serves as an initial step in this direction, it underscores the necessity for future research endeavors to allocate more extensive resources and time for a more profound exploration of these complex matters.

Furthermore, it is important to recognize that the Changpa community faces diverse pressures and challenges in different locations. My research findings cannot be fully generalised and extrapolated to all Changpa communities as the socio-economic conditions and specific contextual factors vary. Each community's unique circumstances and characteristics contribute to the diversity of experiences and perspectives, highlighting the need for caution in generalising the results beyond the specific study sample.

Additionally, it is critical to recognize the possibility of information loss during translation because interactions and information exchange predominately take place in the native tongue. Complex concepts and cultural nuances might be challenging to translate and interpret, and some nuanced parts of the participants' viewpoints and experiences might have unintentionally been neglected or lost in translation. Due to this restriction, there is a chance that the data will only be partially understood, so the results should be interpreted carefully.

Despite these constraints, I concentrated on reducing their impact by applying strict research techniques, upholding transparency in data collecting and analysis, and acknowledging the limits at every stage of the research process. To ensure a complete and nuanced understanding of the research findings, these limitations should be considered when interpreting the findings, applying them to broader contexts, or formulating policy suggestions.

Post-fieldwork activities

1. **Data collation and sorting**

The data was organised and entered into an Excel spreadsheet after completing the transcripts and translations. As a result, the information could be sorted and categorised effectively. It was easier for me to find patterns, themes, and trends in the data using the spreadsheet format, making it simple to analyse the data. Data collation and sorting played a crucial role in organising and analysing the information gathered from the conversations and structured interviews with the respondents. The process included several procedures to guarantee accuracy and facilitate data analysis. To accurately document the respondents'

comments, conversations held during the fieldwork were audio recorded. This made it possible to capture every detail of the conversations, guaranteeing that everything was noticed and understood. To obtain particular data from the individuals, structured interviews using a questionnaire were also carried out.

The audio recordings were transcribed and translated into Hindi and English after the fieldwork was finished. While translation aided understanding for individuals who did not speak the native language of the interviews, transcription included putting spoken words into written form. This process made sure the information could be understood by more people and allowed for consistent analysis across many languages.

Overall, the collection and organisation of the data, from the recording of the audio through the transcription, translation, and recording of the results in an Excel spreadsheet, allowed for a thorough and well-organised dataset. By allowing the identification of significant findings and themes from the respondents' viewpoints, this organised approach allowed efficient analysis.

2. Analysis

After transcribing and organising the data in the Excel spreadsheet, the next step in the data analysis process involved coding the transcripts. This was done using specialised software called QDA Miner, which facilitated the application of a thematic analysis to the data. By coding the transcripts, I assigned labels or tags to the key concepts and recurring topics discussed by the respondents. By coding the data, I could identify major themes and patterns that emerged from the respondents' discussions. This allowed for a deeper understanding of the issues and experiences shared by the Changpa nomadic pastoralists. The coded data provided a structured framework for analysing the information and drawing meaningful insights. It also allowed me to delve into the nuances of respondents' perspectives, identify key findings, and generate valuable insights for future research and policy development.

3. Key findings

The key findings shed light on the important role of women in the transmission of cultural knowledge, the challenges faced by the community in maintaining traditional practices, and the evolving dynamics of grazing practices and livestock ownership in the Changpa community. The major themes from the interview responses also highlight the challenges faced by the Changpa community in maintaining their traditional way of life amidst environmental extremes, economic transformations, and cultural changes. Further, they perceive the rangelands as more than a fount of resources but also as a sacred and important part of their identity. The community's strong connection with nature and their reliance on traditional practices underscore

the need for preservation and conservation efforts to protect their way of life and the rangelands they depend upon.

Detailed raw results from the thematic analysis are mentioned in the annexure I.

- Knowledge transmission-
    - Transmission of Handicraft and Weaving Art: Traditionally, weaving and handicraft expertise are transferred from mother to daughter. Women are essential in maintaining these traditional skills because they act as vital bridges between generations and protect cultural heritage.

Figure 7 Ache Le weaving a carpet

Figure 8 Sheep Wool yarns (right) and a carpet being woven (left)

- Transmission of Grazing Routes Knowledge: Intergenerational transmission of knowledge about grazing routes faces a gap due to changing aspirations among the youth, leading to alienation from traditional practices. Due to this vacuum caused by a lack of time, interest, and engagement in education, there is a danger of losing important information and traditional ways of using grazing pastures.
- Grazing Pastures: Space, Distance, Allotment, and Routes: The traditional calendar guides the selection of grazing routes and camping sites on communal lands, which are allotted to community members through a lottery system. Changes in lifestyle have resulted in a shift towards herding cows closer to the village, affecting the herd size and grazing practices.
- Maintaining Pasture Balance and Regrowth: During migration along the grazing route, herders spend several days at designated spots, letting the grass to recover and maintain its balance. The rotation system makes sure that there is enough grass for everyone in the community and enough pasture management. The calendar followed by the community remains unchanged but the days spent on the dedicated pastures varies according to the availability of grass. The herders are also allotted different pastures using a lottery system as the herd composition (species of the animal, number of animals in a herd) has changed. Change in the growth pattern of the pastures has also been observed as certain species of grass don't grow often due to the feeding pattern of the pashmina goats.

- Roles and responsibilities-
  - Women's roles and daily routine- The roles and responsibilities of women in the Changpa community include everything from domestic work to herding and handicrafts. Changpa

women are an important part of the community. Their busy daily schedule allows little time for leisure pursuits.

- Knowledge Transmission and Cultural Preservation: Women play a key role in cultural preservation by teaching the next generation how to weave and make crafts. Groups within the community like "ama tsogspa" place a strong emphasis on women's empowerment and cultural preservation.
- Decision-making and representation- Grazing routes and pastures are important decisions that are decided in village meetings, which are typically attended by male members. There is a lack of female participation in decision-making at the village level, and some women believe their perspectives are not valued. Contrary to that, some women do not consider as a problem.
- Support group: Ama Tsogspa: The "ama tsogspa" serves as a group of women's support while also preserving culture and generating revenue through handicrafts. They also work for social causes and maintain a habitable environment in the village. While most people see it favourably, some women feel it to be an added strain given their already hectic schedules.
- Livestock Ownership and Responsibilities: Families collectively own livestock herds, and everyone benefits from this ownership. Men tend to handle tasks like herding and selling animals, while women help with domestic duties and herding.
- Grazing Supervision: To watch herders and guarantee good use of pastures, two male grazing supervisors are employed. They have the power to punish anybody who stray from the designated grazing paths.

- Challenges-
  - Harsh Weather and Environmental Extremes: The Changpa community faces significant challenges due to harsh weather conditions, extreme winters, heavy snowfall, and limited resources. Due to the difficulty of finding pastures, fuel, and water during the winter, animals need more food. Uneven pasture growth is caused by irregular patterns of snowfall and rainfall. The difficulties experienced by the herders are further exacerbated by infrastructure development and tourism-related activities.
  - Healthcare Access and Nutritional Deficiencies: The population has significant obstacles due to the limited availability of healthcare services. Herders rely on traditional healers in times of need. Reproductive health facilities are lacking, and scarce food resources contribute to nutritional deficiencies.
  - Predation Challenges: Increased predator population, including wolves, snow leopards, and feral dogs, poses a significant threat to livestock. Traditional practices for predator control

have been restricted, leading to livestock losses and dissatisfaction among herders. Wildlife conservation measures sometimes increase losses for herders.

- Economic Transformation and Education: Changthang's economy has changed over time, moving towards a system centred on money. The younger generation is believed to need education in order to obtain better chances. Women now have access to artisan training programmes, although they frequently find it difficult to finish because of their daily care of the flock. Raw materials and handmade items require fair pricing and an equal division of profits.
- Patriarchy and Gender Roles: Patriarchal norms influence Changpa culture, perpetuating unequal treatment and expectations for women. There are attempts being made to improve female representation in decision-making and empower women through training programmes because they have limited financial autonomy.

- Collection of Wild Edibles and Medicinal Plants, Fuelwood, and Water: The community interacts with the rangelands for collecting water, fuelwood, and herbs for spiritual, medicinal, and daily use. Their traditional practices are impacted by changing resource growth patterns and changes in water access.
- Perceptions on the rangelands-
  - Deep Connection with Nature and Community Living: The Changpa nomadic pastoralists have a deep feeling of community and a profound connection to nature. They practise rituals to preserve environmental equilibrium and see the rangelands as necessary for their survival.
  - Perceived Impact of Tourism and Army Presence: Increased tourism has both beneficial and negative effects, providing money while also contributing to pollution and the deterioration of rangelands. Access to pasture areas is restricted by army camps, which raises questions about the rangelands' long-term viability.
  - Sense of Uncertainty and Reliance on God: The herders acknowledge their dependence on erratic weather patterns and express anxiety about the future of the rangelands. The community also believes that the higher spirits are disturbed due to increased drilling and digging of the Earth which is an act of disrespect and disturbance to the spirits residing within. The spirits are also disrespected due to greed and lack of peace within the community. They attribute the changing weather patterns and rise of erratic events to the higher spirits being angry at the community. They depend on a higher power to keep the rangelands in balance and in good health.

4. Taking it back to the community

It is important to communicate and disseminate the research findings with the community involved in the research. It is also essential for making the research more impactful. As it is a researcher's ethical responsibility as well to ensure that the results are communicated with the community, I provide a few suggestions which can be useful for the same-

- The results can be compiled and published as an academic paper or a series of articles that can be made available to everyone.
- The research output can be translated into the local language using infographics and visual aids.
- It can be communicated to the community along with the organization's ongoing projects in place with the help and support of the on-field team.

A proper plan of communication will be devised along with the host institution in order to achieve greater reach and take it back to the community.

VIII. Reflection/discussion of skills gained

- **Reflections about the personal journey**

This internship has been a first attempt towards understanding pastoral systems, their lifestyle being closely interlinked with the landscape and surroundings, the role of men and women complimenting each other for the sustenance of the system as a whole. It has been important to understand how patriarchy is tightly knitted in the cultural fabric of the societies and the effects of these hierarchies are often visible in unspoken words and actions. The interactions with the Changpas also made me realise the biases that I was carrying with me on the field which acted as a resistance towards accepting the responses and created expectations from the field. The challenging landscape exposed me to harsh weather conditions which acted as an experience of understanding the capabilities of my own body and mind. It also gave me an opportunity to know my hard limits and respect the boundaries. As the foundation of qualitative research is knowing your subjects, I also realised that knowing the field and the community just by reading literature is never enough. Further, as a part of knowing the subjects and the field, I also became more aware of my positionality within the field as an external person or an outsider researcher. Rather than turning a blindsight, being ignorant to, or trying to be a part of the community, I would like to acknowledge my position and the agency I have. I was a researcher, a *yegarpa (down wala*-person coming from "down" meaning outside Ladakh) trying to understand the culture and system from an external point of view while entering the field with a conservation organization that has a position of power. Due to the long-term presence of WWF in the landscape, the selection of the respondents and the responses received from them might be impacted by an inherent bias based on the connections and relations of the field team with the community. I was also met with reluctance in the response due to interview fatigue in the community at certain places. The internship experience equipped me with the necessary skill set for estimating the project cost, pitching the idea, and grant proposal writing, communicating with the community, understanding and learning non-verbal modes of communication, the art of efficient note-taking, the importance of maintaining a field diary, transcription of the interview scripts, coding the scripts for further analysis, and writing the report.

- **Reflections on the research**

Figure 9 Women at leisure

A starting point for working with pastoral women should be an understanding of women as part of a pastoral household unit. Though women have their own identities, needs, and aspirations, they may have to compromise these for the good of the 'whole' and often do. Though it can be suggested that women should focus on their needs as individuals rather than those expressed as a household member, there is the danger then of risking the collapse of the pastoral system as it exists and functions." (Flintan, 2008). Men and women have different interactions with the rangelands. This is also because of the division of responsibilities within a household. The responsibilities are divided to keep a household unit functioning. A pattern can be observed in many pastoral societies where the men are involved in income-generating activities (production economy)

and women play the role of birth givers and caregivers, where they add and take care of social human resources (reproduction economy) (Köhler-Rollefson, 2012). It was observed from the responses that the workload seems unbalanced, with women having to manage household chores, food preparation, and herding, while men mainly focus on tasks like construction, earning, shearing, and selling animals. Further, most of the women respondents felt that they hardly get time to rest due to their routine. On the contrary, male respondents mentioned in the interviews that men go out to earn and women usually do small household work. They perceive it as *"ghar ka chota mota kaam"*. Women are expected to play a supporting role in daily life, while men often control income and subsidies. Female respondents expressed their frustration with these gender dynamics, recognizing the need for change and more financial autonomy.

"Herding is an everyday job, we (husband-wife) both take turns and take the herd for grazing, but whatever we earn from that, he (husband) takes it. It is like that in every family. We (wives) have to ask for money from them."(Interview, female herder, Thukjey, Samad)

The contribution in the "reproduction economy" does not reflect in the economic calculations most of the time but results in a greater burden of work on women than men (Köhler-Rollefson, 2012).

"In our culture, the family owns the animals. We all take care of them also. But only the head of the family gets the subsidy money. If we can also get the subsidy we will feel better."(Interview, female herder, Punguk, Hanle)

However, some older respondents do not see the need for such changes and believe that women should continue in their traditional roles. The prevalence of patriarchy impacts women's access to resources and financial gains. Women also have a responsibility of culture preservation by giving their daughters the necessary skills and knowledge of traditional handloom art. Changpa women are often attributed as "respectable" and "good" by society when they have the skills of weaving and knitting and are able to sustain and work hard in extreme weather conditions. They often contribute to removing social evils and contribute to maintaining peace within the society by working to curb liquor consumption, cleaning the village and segregating waste, etc. They are involved in household decision-making but lack representation in public decision-making spaces. With time there has been a minor change in these situations also as mentioned by the respondents. As the younger generation is ready to accept and welcome the change, the older generation often supports the traditional roles and responsibilities of Changpa women. The matters involving the sale of animals are often handled by the male- head of the family. Women stay out of this, and they also do not take part in the discussions regarding the price of the animals. It was mentioned by the respondents that they

consider selling the animals as an act of sin and even deciding the price for the animals is a sin as well. It is considered the responsibility of the men to protect the women from this act of sin, hence they aren't included in these matters.

"It is very difficult to break the glass ceiling, but education can provide new perspectives and change the thinking of the society". (Interview, a female representative in the governance system from a Changpa family, Leh)

Within the Changpa community, there is an increase in acceptance and positive attitudes toward getting an education. Many members of the community also felt that increased education will help improve women's position in society. It was recommended by the community that educated girls should be involved in village-level decision-making. Along with this, being able to get a share of the income is also regarded as "empowering" with the sense of being heard in the community. Various NGOs and the government have made many efforts to help women by generating additional income-earning opportunities and training them in handicraft skills. These efforts should attempt to help women empower themselves rather than the agency attempting to "empower women"(Flitan, 2008). They should be enabled and encouraged to express themselves to their potential as producers, and artists, managers (Flintan, 2008) and also be the recipients of the gains from the productive activities. However, women are not powerless victims but have agency and knowledge in ensuring the sustainability of highland environments, as well as in rangeland management and pastoralist livelihoods (Verma & Khadka, 2016) . The process should be taken at the pace the women are comfortable with and not make it a burden for them (Flintan, 2008). It was observed from the responses that most women could not finish the training being given to them for developing their skills as they were busy with their routines and it became a burden for them further discouraging them from pursuing it altogether. Furthermore, women also have limited access to health infrastructures. Both men and women in the pastoral societies face the challenge of lack of health facilities, but women have additional challenges of not being able to dedicate time and efforts to maintaining good health, lack of money to access the facilities, and also unavailability of the facilities in general. It was observed that there is a lack of medical facilities for female reproductive health and due to the extreme climate, it is also difficult to maintain hygiene. The respondents mentioned that they often go to Leh or Nyoma for medical facilities during pregnancy and childbirth. This highlights the desperate need for a policy that can help in building better health infrastructure along with creating awareness about and access to feminine hygiene routines. To be able to come up with a policy structure, more understanding and research of the traditional routines in the Changpa pastoral lifestyle for maintaining good reproductive health and hygiene is needed.

The Changpa community interacts with the rangelands for varied purposes apart from grazing and herding activities. They also depend on the rangelands for collecting wild edibles and herbs like *palu, zatzod/Dzatsutt, skotche* for consumption and spiritual purposes. They also collect fuelwood (*Rigpa*) and water from the *chumik* (natural spring). These interactions and dependencies also contribute in forming the perceptions of the rangelands. The Changpas have an intricate and deep connection with the rangelands as they perceive it as their source of sustenance and their only true home.

"I have grown up here, on this land. The grass, the mountains, and the streams are beneficial just as they are- I don't need to use them to benefit from them. It is what feeds me. This is my home" (Interview, Goba of Naga Village, Hanle)

Figure 10 Men and the village elders gathered to perform a ritual to rejuvenate a dried natural spring

Figure 11Sacred site at a natural spring (chumik)

Their interaction with the rangelands goes beyond practical purposes such as grazing and collecting resources; it also includes spiritual and cultural activities. The *Chumik,* a water source, is considered sacred, and rituals are performed to revive dried-up springs, protect herds from predators, and manifest favourable weather conditions for the health of pastures. Their belief in the interconnectedness of nature and the balance of *Jungwa zhi* (four elements- earth, water, fire, air) reinforces the importance of maintaining a harmonious relationship with rangelands. The community also perceives the rangelands as vulnerable to extreme weather events and recognizes the effects of changing climate on the rangelands. Changing climates in rangelands have a tremendous effect on the availability and quality of pastures and other natural resources such as water, soil, and biodiversity (Verma & Khadka, 2016). The changed patterns of snowfall and rainfall affect the pasture growth and also *nullahs* that are the major source of water on the pastures. They link the changing climate and erratic rainfall patterns with the disturbed spirits residing in the mountains and within the community due to pollution caused by increased tourism, excessive digging, and construction work for "development". They also mention the increase in predator population which they feel has a connection with a ban on the traditional practice of killing the predators but has led to an increase in losses for them. Pastoralists in the Himalayas are often seen as a threat to the environment by various decision-makers (Verma & Khadka, 2016). The community also mentioned their distress about their strained relations with the wildlife department as they are often seen as responsible for the deterioration of the rangelands. They are held responsible for increased conflicts with the wildlife and decreasing population of some species of wild

ungulates. In addition to this, increased tourism and development activity is seen as detrimental to the ecological balance of the rangelands and their lives in turn. As they express their negative emotions about the deterioration of the the rangelands and dying Changpa culture, they hold feelings of uncertainty for the future of the rangelands. The community acknowledges the urgent need to take steps for conserving the rangelands and also preserving the knowledge and culture for future generations.

IX. Summary and Conclusions

The roles and responsibilities of men and women are closely interlinked and interdependent with each other in the Changpa pastoral system. A disruption or imbalance in the division of labour within the two can lead to inefficiency in the functioning of the society or even total collapse of the system. Women in the society play an important role as knowledge bearers and act as a bridge for the transmission of the same. Their contribution to the working of the household and the larger community cannot be substituted and need more recognition. The benefits from the conservation efforts and other plans implemented need to be received and enjoyed by men and women both. There is also a need for devising the conservation programs in a way that women's voices are highlighted through their involvement as well as beneficiaries. Women along with playing an important responsibility of transmitting the skills of handloom, are the knowledge bearers of the situation of grazing grounds and pastures, water availability, and collection and availability of wild edibles. Documenting this knowledge can be useful for understanding the rangelands and the changes, and challenges being faced by them. This information is important for formulating efficient policies and management plans.

With the changing time, the aspirations of the youth are also changing. Increased tourism and other development activities are the reason why the community is not in a state of complete isolation anymore. The new opportunities have also led to different expectations from life in the younger generation. The traditional management system which is operated and institutionalised by the Changpa community themselves is undergoing changes due to various factors. But the management system and the indigenous knowledge are important for efficient management and conservation of the rangelands and the biodiversity dependent on it. The gap created in the knowledge transmission between generations due to changing aspirations is widening, but it is not fair to expect the aspirations of the youth to be unchanged and for them to not expect a better quality of life. As the younger generation is not much involved, the activity of herding is being outsourced to other herders within the community and even people outside the community. There is a need to properly document the knowledge of the pastoral system and understand it in order to preserve the culture. Furthermore, apart from this, the importance of sustaining the traditional practice needs to be communicated to the youth by the elder generations as well as other platforms of communication, and the creation of more facilities and incentive, compensation schemes can aid in increasing the involvement of youth. The documentation of the knowledge can act as an important tool to pass the knowledge on to future generations even if direct involvement decreases.

Research shows that livestock herding contributes in managing the pastures and inducing it to grow efficiently (Singh et al., 2013). The respondents also mentioned that the goat dung acts as manure and promotes the growth of grass, and the seeds are also dispersed with it. Hence, pastoral livelihoods are also important for managing these rangelands. The market of handloom and pashmina weaving is also dependent on the herders. The decreasing number of herders is also a matter of concern for the industry. Hence, better market linkages, a minimum support price system, and better compensation schemes for losses are needed for them to achieve a better quality of life.

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XI. Annexures

I. Detailed theme-wise results

Theme: Knowledge Transmission

Transmission of Handicraft and Art of Weaving

The knowledge of handicraft and art of weaving is passed down from mother to daughter, ensuring the preservation of traditional skills. Women play a central role in transmitting this knowledge, acting as crucial links between generations and preserving cultural heritage.

Transmission of Grazing Routes Knowledge

The intergenerational transmission of knowledge regarding grazing routes faces a gap due to changing aspirations, leading to youth alienation. Lack of interest, time, and availability caused by engagement in education contribute to this gap. Such a gap can be dangerous and result in the loss of essential knowledge and cultural practices related to grazing pastures.

Traditional Calendar and Changes in Grazing Practices

Despite changes, the younger generation still follows the same traditional calendar as their predecessors. However, minor adjustments are made based on grass availability. Administrative boundaries, such as the Kharjung-China border, restrict access to certain areas. Encroachments by the Kharnak community in the Rupshu plateau are also reported if they travel to the China border.

Grazing Pastures: Space, Distance, Allotment, and Routes

The traditional calendar guides the selection of grazing routes and camping sites, which are communal lands identified during village meetings. Allotment of these lands to community members occurs through a lottery system. However, a sedentary lifestyle has been adopted by many individuals who either sold their herds or outsourced herding. Older herd owners unable to continue herding and the younger generation pursuing different vocations contribute to this pattern. As a result, livestock herd compositions have changed, with families opting for cows for self-consumption. Cows are herded closer to the village rather than to the mountain pastures, reducing the herd size. Rotational grazing, following the traditional calendar and predetermined routes, ensures pasture management and sufficient grass for the animals and the community.

Maintaining Pasture Balance and Regrowth

During migration along the grazing route, herders spend several days at each predetermined location. This practice ensures that the grass is not overused, maintaining the existing balance. The rotation system also allows the grass to regrow when herders return to the same places after completing a rotation of the pastures.

Theme: Women's Role and Responsibilities in Changpa Community

Women's Daily Routine

A day in the life of a changpa woman starts early in the morning when she begins with praying, doing her household chores, cooking, cleaning, feeding the livestock, going herding or going for labor work, milking the animals, preparing dinner, and preparing the feed for the next day. This routine varies according to the season, with added responsibilities in summer during the shearing process and spring during lambing and kidding season. Women are also responsible for milking goats and yaks, processing milk into curd, paneer, and cheese. They must take care of newborn animals, making the spring season challenging. They engage in spinning woolen yarn while waiting for the herd to graze and are usually involved in weaving.

Leisure Time and Workload

"Pehle Dil ko sukoon milta tha" There is no time for leisure in today's world.

"Pehle toh me bhidu bakra ke sath jaati thi, ab umar ho gai hai. Ab pehle jese kaam nahi hota"

Women hardly get time to rest due to their busy routine, leaving little time for leisure activities. Some consider handicraft activities like carpet knitting and blanket knitting as leisure, while others find small moments during meals or sleep as their only respite. Many feel overburdened with daily work and additional responsibilities. The workload seems unbalanced, with women having to manage household chores, food preparation, and herding, while men mainly focus on tasks like construction, earning, shearing, and selling animals. From the interviews conducted, it was observed that most of the women respondents felt that they hardly get time to rest due to their routine. On the contrary, male respondents mentioned in the interviews that men go out to earn and women usually do small household work. They perceive it as *"ghar ka chota mota kaam"*

Knowledge Transmission and Cultural Preservation

The art of weaving is traditionally taught by mothers to their daughters, signifying the importance of women's role in cultural preservation. Women also pass on knowledge of handicrafts and participate in activities of upliftment and betterment of society through groups like "ama tsogspa" (mothers' alliance). These groups engage in cultural preservation, women empowerment, and income enhancement activities through handicrafts. Women's contributions to the community are essential for maintaining traditions and customs**.**

Decision-making and Representation

At the household level, decisions are taken collectively, but important matters like migration routes and grazing pastures are decided in village meetings (yulpa). Male members usually attend these meetings, and in their absence, females represent their views. However, some female respondents feel that their opinions are often disregarded, and they face challenges expressing themselves. The need for more female representation and a change in attitude towards women's suggestions and decision-making is recognized by some, while others believe that women are not equipped to make decisions.

Support Group: Ama Tsogspa

Many women in the community are part of the "ama tsogspa" (mothers' alliance), which focuses on cultural preservation, women empowerment, and income generation through handicraft activities. The group organizes cleaning drives, cultural events, and works towards reducing liquor consumption. They receive training in handicrafts from the government and collectively produce and sell handicraft products like blankets, socks, and caps. Ama tsogspa also acts as a support group for women, addressing their concerns and presenting issues to the authorities if needed. While most respondents view ama tsogspa positively, some consider it an additional burden due to their already busy daily routines.

Livestock Ownership and Responsibilities

The livestock herd is collectively owned by the family, and the benefits from the animals are enjoyed by everyone. However, subsidies are transferred to the head of the household, usually a male, based on his ownership of the livestock. Males take on responsibilities like herding, construction, earning, and selling animals, while women contribute to herding and take care of household chores and food preparation during

the herders' absence. The workload distribution highlights gender-based roles and responsibilities within the community.

Grazing Supervision

To ensure the proper use of pre-decided pastures for grazing, two grazing supervisors (sa-khaktak) are appointed from the community, chosen from males. They oversee the herders and impose fines on those who deviate from the designated grazing routes. The responsibility of supervision is shared and rotated among community members.

Theme: Challenges Faced by the Changpa Community

Harsh Weather and Environmental Extremes

Harsh weather conditions, extreme winters, heavy snowfall, and scarce availability of resources pose significant challenges to the Changpa way of life. Winter snowfall makes it difficult to find pastures, firewood, and water in the "nullah," requiring supplementary fodder for the animals. Herders must melt snow and ice for drinking water. Snowfall also hampers movement for both herders and animals. The extreme winters, while challenging, benefit the growth of pashmina wool. Spring and autumn bring additional challenges during the lambing and kidding seasons. Lambs are sometimes born on the pastures, making it challenging to bring them back to the camp and prevent herd dispersal. Spring also leads to grass sprouting, causing herd dispersion and vulnerability to predation. Erratic rainfall and snowfall patterns have led to scarce seasonal rain and snow events, as well as unseasonal flashes of precipitation, resulting in uneven pasture growth. Limited snowfall causes the "nullahs" to dry up, making it difficult to find water sources for the pastures. Pasture loss, due to increased infrastructure, road construction, and tourism activities, further exacerbates the challenges faced by the herders.

Healthcare Access and Nutritional Deficiencies

Limited access and availability of healthcare services pose a major challenge to the Changpa community. Primary health centers are set up in the base village, but access becomes limited during migration. Herders carry essential medicines, relying on traditional healers called "aamchis" in case of emergencies. Over time,

health conditions have degraded due to various factors such as access to packaged food and resource pollution. Women face difficulties in following modern reproductive hygiene practices due to weather conditions. They often need to go to Nyoma or Leh for medical facilities during pregnancy and childbirth. Reproductive health and hygiene facilities are lacking in the current health infrastructure. Scarce food resources also contribute to nutritional deficiencies among the community members.

Predation Challenges

The increase in the number of predators, such as wolves, snow leopards, and feral dogs, poses a significant threat to the livestock. Wolves attack weaker animals one by one, causing substantial losses.The respondents mentioned that the wolves come in a pack of 17-18 individuals and target the weaker animals one by one. One attack can lead to a loss of 20 to 30 animals as due to the fear, the herd gets dispersed and it is extremely difficult to get each animal back. They also mentioned that earlier they could leave the yaks and horses to graze freely in the pastures but now they need a herder with the yaks as wolves and snow leopards attack them. Snow leopards target yaks and horses, making it unsafe to take herds to certain areas. The ban on traditional practices like setting up wolf traps (shangdongs) and killing wolf cubs has led to a rise in the predator population. Feral dogs, whose territory overlaps with the nomadic camps, cause conflicts and livestock losses. Predators have become accustomed to human presence, making it difficult to scare them away from the herds. Compensating for the losses due to predator attacks is a lengthy and complicated process, causing significant financial losses for the herders. The Changpa community feels that they should be incentivized with instant compensation to protect their herds from predators. The population of Kiang (wild ungulates) has also increased, leading to resource competition between wildlife and livestock. Wildlife conservation measures have sometimes resulted in increased losses for the herders, creating a sense of dissatisfaction.

Economic Transformation and Education

The economy of Changthang has transformed over time, with the barter system being replaced by the need for money. Improved market linkages and accessibility to resources have influenced changing demand patterns. Education infrastructure has improved with the establishment of schools in the villages.*"Education gives diverse perspectives and new thoughts. It is necessary to know what is good and bad"* .Education is seen as essential for young generations to survive in the modern world and access better job opportunities. However, changing aspirations and alienation of youth from their traditional lifestyle and culture are

concerns. The younger generation lacks knowledge about herding practices, assessing pastures, finding water holes, protecting herds, and identifying suitable grass. Handicraft training programs have been introduced to generate additional income opportunities for women. While these programs have been beneficial, women often struggle to complete the training due to their daily herding responsibilities. Weak market linkages and middlemen often result in limited returns for handicraft products. The establishment of a pashmina de-hairing plant in Leh has not fully benefited Changpa pashmina breeders due to logistical limitations and minimal earnings on raw materials. A well-planned policy structure is needed to ensure fair pricing and equitable distribution of returns for raw materials and handicraft products.

Patriarchy and Gender Roles

"Voh aadmi to itna ghatiya hai, meri aurat se bhi zyaada ghatiya hai", said a man casually mentioning degrading his wife, while the wife smiled to it. "When you keep telling a child that this is a good thing, he believes that. Just like that, Women are told that this behaviour is normal for hundreds of years and they believe it. It is normal for her", a female respondent narrates the incident to express her sentiments on the nature of patriarchy within the community. Patriarchal norms and gender roles deeply influence the Changpa culture. Women are attributed with adjectives like "tough," "hardworking," and "strong" due to their endurance of adverse weather conditions and their ability to work in such conditions. However, patriarchy also perpetuates unequal treatment and expectations for women. The respondents mentioned that a woman is considered "respectable" and "good" when she is an expert in the art of weaving and spinning and practices it regularly, can manage all chores and plays the role of a caregiver.Women are expected to play a supporting role in daily life, while men often control income and subsidies. Female respondents express their frustration with these gender dynamics, recognizing the need for change and more financial autonomy.*"Herding is an everyday job, we (husband-wife) both take turns and take the herd for grazing, but whatever we earn from that, he (husband) takes it. It is like that in every family. We (wives) have to ask for money from them." "In our culture, the family owns the animals. We all take care of them also. But only the head of the family gets the subsidy money. If we can also get the subsidy we will feel better."* However, some older respondents do not see the need for such changes and believe that women should continue in their traditional roles. The prevalence of patriarchy impacts women's access to resources and financial gains.*"It is very difficult to break the glass ceiling, but education can provide new perspectives and change the thinking of the society".* Efforts are being made to empower women through handicraft training programs and promote female representation in the political system to challenge patriarchal norms and provide role models for Changpa women.

Theme: Collection of wild edibles and medicinal plants, fuelwood, water

Apart from the routine of herding, people also interact with the rangelands for collecting water, fuelwood, and herbs for spiritual and medicinal purposes. The respondents mentioned that they collect "rigpa" (fuelwood) and "gyapshun" (kiang dung) for using it as fuel for bukharis and cooking stoves. A change in the growth of "rigpa" which is to be believed due to lack of rainfall has been observed by a few respondents They also collect water from the springs (chumit) for their daily use. With the course of development and increased tourism, water has been made available in villages through "jal jeevan mission" but the people still depend on the chumit as they travel to the pastures in the mountains or far from the base village. Solar-powered water pumps also have been set up at certain pastures which are used commonly by people. There is a common sentiment among the people that " Jal Jeevan mission has made more water available for humans but our animals are facing more trouble due to drying chumit".In winters, they collect water by melting the ice from the mountain tops (chasma). People also forage edible plants and herbs like pehlu, zatzo, kotse for consumption, medicinal use, and spiritual use. People following a sedentary agro-pastoralist lifestyle mentioned that as they do not go to the pastures anymore, they just forage for pehlu and do not depend on the rangelands for other edible plants.

Theme: Spiritual and Cultural Connections with Rangelands.

Deep Connection with Nature and Community Living

"I have grown up here, on this land. The grass, the mountains, and the streams are beneficial just as they are- I don't need to use them to be benefitted from them. It is what feeds me. This is my home"

The Changpa nomadic pastoralists have a profound connection with nature and a strong sense of community living. They view the grass, mountains, and streams as essential elements that provide them with sustenance and a sense of home. Their interaction with the rangelands goes beyond practical purposes such as grazing and collecting resources; it also includes spiritual and cultural activities. The Chumit, a water source, is considered sacred, and rituals are performed to revive dried-up springs, protect herds from predators, and manifest favorable weather conditions for the health of pastures. The community believes that greed and disruptive practices within the community anger the spirits (lha lhu) residing in the area. They express concerns about the negative impact of increased construction and digging on the mountains, which they believe has led to drastic weather changes, erratic rainfall events, and predator attacks. The disregard for

traditional rituals before constructing corrals is seen as a sign of disrespect towards the Yultse (spirit of the mountains).

Perceived Impact of tourism and Army Presence

The Changpa community has mixed feelings about increased tourism in the region. While tourism generates income, it also has negative effects on the rangelands. They observe pollution, degradation of grasslands due to offroading activities, and garbage dumping in Chumit. Tourism also affects the cultural practices of the Changpas. The encroachment of army camps on their pasture grounds further limits their access to the rangelands. The community believes in the Buddhist philosophy of maintaining a balance among the four elements of life, which includes the presence of animals for the good health of the pastures. *"The pastures will be gone if the herders are not there anymore as the animals are important for the good health of the pastures"*.(herder, personal communication) They express concerns about the destruction of the rangelands if rampant development activities continue. The herders perceive the future of the rangelands as uncertain, dependent on rainfall and snowfall, which they believe only God can control.

Sense of Uncertainty and Reliance on God

The herders express a sense of uncertainty regarding the future of the rangelands. They acknowledge that it is dependent on the unpredictable patterns of rainfall and snowfall. They believe that only God has control over these natural elements. This perception highlights their realization of the limitations of human agency and their reliance on higher powers to maintain the balance and health of the rangelands. *" When we were young, our grandparents used to forbid us from throwing stones down the slope as it would disturb the mountain. Now, look how the mountain is being disturbed, there is JCB digging the land everywhere. People also don't do rituals before constructing corrals anymore. How will the Yultse not get angry at us?"* said Aba le. The rapid changes occurring in the rangelands, such as increased construction, disruptions to the natural order, and encroachment on pasture grounds, create distress among the herders. They express their concern for the well-being of the rangelands and the impact on their way of life. They believe in the Buddhist philosophy of the balance of four elements of life (Jungwa) which is essential to maintain a balanced and healthy state of surroundings. Their belief in the interconnectedness of nature and spirituality reinforces the importance of maintaining a harmonious relationship with the rangelands and the need for preservation and conservation efforts.

II. Interview guide

- **Background information- getting to know them**
    a. Name
    b. Study area
    c. Family
    d. Caste
    e. education
    f. Children
    g. Since how long they are staying there
    h. Livelihood strategies
    i. Livestock- herd size
    j. Agriculture activities
    k. Out Migration to leh, interaction with tourism?

- **Roles and responsibilities**
    a. What does a day in a ChangPa woman's life look like? (time spent- list of activities)
    b. Non participant, participant observation of activities
    c. What are the productive and reproductive activities (farm production, livestock tending, household level and community level) done by women and men in the study areas?
    d. What is the division of labour and responsibilities between women and men for the different productive and reproductive activities?
    e. What are seasonal or yearly migration patterns of men and women in pursuing their daily activities and livelihood strategies? How has migration impacted on the workload of people left behind?

- **Livestock- care, ownership**
    a. What is the herd size- livestock categorization?
    b. Who owns the livestock? (who owns what?)
    c. Who takes care of the livestock?
    d. Who takes care of the livestock when they are sick?
    e. How are women involved in the decisions of buying, selling, sacrificing animals?
    f. Who takes them for grazing?
    g. What are the challenges women face when they go out for grazing with the animals?
    h. What is their role in the sheep, goat rearing process?- (handloom activities)

- **Mobility and migration**
    a. What is the migration pattern of the household?
    b. Does the whole family migrate together, or just the men migrate with the herd?
    c. How does migration affect their daily routine and the workload?
    d. What are their roles and responsibilities in the migration, decision making?

- **Rangeland management, perceptions (past, present, future- changes), availability of resources-**
    a. Who chooses the pastures for grazing?
    b. What are their strategies to manage the pasture and avoid over grazing?
    c. Do the livestock prefer certain pastures/ grasses over others?
    d. How was the situation in the pastures before 20 years?
    e. Are there any major changes in the rangelands over the period of 20 years?
    f. Have they seen a certain grass type increase/decrease in the pastures?
    g. How has their grazing pattern changed with time?
    h. How has their role in rangeland management changed?
    i. What do they derive from these rangelands? (what are the major needs they are dependent on these rangelands for?) (source of water, forage, fuelwood for cooking heating)
    j. Who participates in collecting these resources and transporting them?
    k. To what extent does natural resources (water, forage, fodder, fuelwood) availability in the rangelands meet the needs of women pastoralists? What are the difficulties women are facing in accessing these resources?
    l. What would address women's problems in relation to accessing natural resources?
    m. What changes have taken place in terms of the availability and accessibility of these resources over the past two decades?
    n. To what extent has the availability of resources impacted on women's workload, drudgery and health?

- **Access and ownership, control of resources**
    a. Who owns the land and livestock? Who has the control over it?
    b. Who takes the decisions related to the ownership and management of the big/small livestock?
    c. Who takes the decisions related to crop production and other pastoral production activities?
    d. Who decides when to move and where?
    e. What role does women play in utilization of the income in the household?

- **Rangeland governance**
    a. What are the formal and informal institutional arrangements of management of the rangelands, livestock and activities dependent on it?
    b. What is the role and representation of women in it? What is their decision making power?
    c. What kind of activities women are actively involved in related to the governance mechanisms?
    d. What kind of activities women are indirectly involved in?
    e. How are their voices represented in the public space?
    f. What is the representation within ama tsogspa?
    g. What are the activities of ama tsogspa? What is the decision making power they hold?
    h. What type of support (e.g., extension services, knowledge transfer, technology, credit, etc.) have pastoralist communities received from external institutions (NGOs, GO, project etc.) in their efforts to cope with hardship and poverty in rangelands?
    i. Do women and men have equal access to information related to agriculture and other natural resource management?

j. How do women and men get information related to government services?
k. How do women and men have access to information related to environmental changes, including early warning systems, new technologies, etc.?
l. To what extent are the formal and informal institutions aware of the differential needs that women and men may have and are they addressing those?
m. How do women and men have access to information related to government services?

- **Major changes**
    a. How do women perceive tourism?
    b. Is there any impact of tourism over the rangelands?
    c. What changes have been observed- climatic and socio-economic, have been observed by women in the past 20-30 years?
    d. What are the implications of these changes on their life and livelihoods?
    e. What do they think about the present of the rangelands? What do they wish to see?

- **Policy analysis(not mandatory)**

    a. Are there any policies, systems, programs in place related to management of the resources, gender issues? How aware are women of these programs? How has it impacted their lives?
    b. Do these policies have gender specific objective, strategies and programmes that would address the gender differential needs of men and women pastoralists?

- **Other questions**
    a. How do the young generation perceive these rangelands?
    b. Has education made any change in their life and lifestyle?
    c. How do the young generation perceive pastoralism? Does it align with their aspirations?

Reference-

Verma, R; Khadka, M (eds) (2016) Gender and pastoralism in the rangelands of the Hindu Kush Himalayas: Knowledge, culture, and livelihoods at the margins of the margins. Kathmandu: ICIMOD

III. Questionnaire

Individual level questionnaire-

Name: Village: Date:

1) Background information-
   a) Tribe-
   b) Sub-group (if any)-
   c) Household composition-
   d) Are you a livestock owner/ keeper/ herder
   e) Occupation (livelihood practice)-
   f) Other income sources(if any- for eg- labour work, handicraft)
   g) Educated – Y/N
   h) Level of Education-
2) What are your daily activities? (list them below with time/reference of time, make different list of summer and winter) (document for men and women- get an idea of the type of household and livelihood activities they are involved it)
3) Do these activities change as you migrate? Y/N
4) In the below mentioned task list, please indicate which tasks are accomplished by women/men/both (W/M/B)-
   a) Animal herding (goats, sheep, yaks)- W/M/B
   b) Feeding the animals (goats, sheep, yaks)- W/M/B
   c) Milking (goats, sheep, yaks)- W/M/B
   d) Cleaning the yards- W/M/B
   e) Processing milk- W/M/B
   f) Shearing- W/M/B
   g) Weaving- W/M/B
   h) Construction of fences and pens- W/M/B
   i) Consulting veterinary doctors/amchis- W/M/B
   j) Selling animals- W/M/B
   k) Selling wool, products, milk, meat- W/M/B
   l) Collecting fuelwood- W/M/B
   m) Collecting water- W/M/B
   n) Taking care of family- W/M/B
   o) Cooking- W/M/B
   p) Cleaning- W/M/B
   q) Other activities
5) Who makes the decisions for the following? Please select from the options below-
   a) Where to graze- W/M/B
   b) which animal to sell- W/M/B
   c) Where to migrate- W/M/B
   d) When to migrate- W/M/B
   e) how much to sell the animal for- W/M/B
   f) Fixing the rates for the handicraft products- W/M/B
   g) Other major decisions-

6) How do you interact with the rangelands? Please select from the under-
   a) grazing animals
   b) survival needs
   c) Fuelwood
   d) Fodder
   e) Wild plants for medicines
   f) Water
   g) Cultural interaction (festivals, rituals etc)
   h) Other- please mention here_____
7) What are the major challenges you face while interacting with the rangelands? Has it increased over time?(challenges while grazing, for collection, for means of earning etc)
8) Do you remember how the rangelands were when you were young? Has it changed over time? (note for the interviewer- we can ask more questions about any extreme climate events)
9) How do you decide that there is a need to change the pasture for grazing? Why do you change that pasture?
10) Are there any traditional strategies for managing these rangelands? (eg- migratory routes, changing pastures etc) How do you make sure there is enough grass for the animals?
11) Do you get any help/guidance from any institutions regarding the management of these rangelands? Y/N . If Yes elaborate-
12) Are you a member of Ama Tsogspa? Y/N
    If yes, what kind of activities are you involved with?
    (The question will change while interacting with a male respondent- Is your wife/daughter/mother/sister a member of Ama Tsogspa?)
13) Would you like your children to continue pastoralism in the rangelands? What do your children want to do later? Do they want to pursue education?
14) Do you think women have something to do with decision making regarding the rangelands?
15) How do you think women can help and get involved more in the process of rangeland management?
16) What do you think will happen to the rangelands after a few years? Will there be some changes?